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What is Wrong with the Telephone

By C. S. GOLDMAN,

Chairman of (British) Parliamentary Telephone Committee.

The telephone is the most wonderful and least appreciated of the marvels of modern science. It is the ry magic carpet of fable, transporting its owner in lash to the place where he desires to be. By its aid business man seated in his City office can be one tant instructing his agent at the Docks and the next guing with his wife at Richmond. The busy housefe can do her shopping without stirring more than few steps from the nursery door. The electric curnt will carry the human voice over the North Downs d across the trim gardens of the South, under the ters of the Channel, across the plains of Northern ance, and deliver it easily recognizable in Paris in moment of time. Nor is the means by which this racle is performed less marvellous than the result. e electric current which operates the telephone is rhaps the gentlest and swiftest thing in the world. y description of it must seem to be hopeless exagration. It is about one five-millionth part of the rrent required to light a single electric lamp. To a picturesque illustration of Mr. H. N. Casson's, you cool a spoonful of hot water one degree you ll have released sufficient energy to run a telephone r ten thousand years. If you catch the falling tear a child you will have enough water-power to carry ur voice from London to Paris.

This is a miracle, but in order to make miracles of actical utility in modern life it is required that they uld occur when they are wanted, and in the way t is wanted. A magic carpet that suddenly refused stir when the proper incantation was repeated uld become unpopular, and even more annoyance uld be caused if, instead of carrying its user to the ce where he wanted to be, it pitchforked him, rmed and angry, into the back drawing-room of a al stranger. That is what the telephone here is nstantly doing to-day, with the consequence that ple are tempted to attribue to the telephone itself lts which are merely due to the system under which it is operated. Every nation gets the telephone system that it deserves, and we have fully earned all the exasperation that we have to endure by our persistent refusal to recognize the change which the advent of the telephone has brought to the world. The postal service transmits a letter, the telegraph service sends the contents of the letter, but the telephone communicates the thought behind the letter. There is one great fundamental principle of telephony which is too little regarded in England, and that is that every telephone added to a service increases the value of all telephones in the service. We still do not realize that a house without a telephone is as obsolete as a house without a bathroom. We are still content to be twenty years behind the times in our telephone system.

For an idea of what a telephone system can do we have to look to America. In spite of the fact that it was largely built up by Englishmen, the telephone stands as the one characteristic product of American civilization. Not a very lovely product perhaps, not one which indicates a very high advance in the scale of civilization, but a product which no nation which means to maintain its position in commerce to-day can afford to ignore or even to underestimate. The United States adds in one year to her service as many telephones as are comprised in the entire system in this country, and increases the mileage of her telephone circuits each year by more than the distance between England and Australia. In the States every alternate family possesses a telephone. There the low charge of 9*d* to one shilling a week for a private instrument has enabled two and a half million farmers to be in telephonic touch with each other and their markets. Contrast this development and these facilities with the opportunities vouchsafed to only two thousand farmers in this country. It is possible to converse from Denver to New York, a distance of over two thousand miles, without straining the voice, and to be perfectly audible. To-day New York leads the world with a

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telephone service that is unapproachable for efficiency. If you mass together all the telephones of London, Glasgow, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bristol and Belfast, you will still fall short of the number of telephones in this one American city. At the slackest time in the twenty-four hours—that is between three and four in the morning—there are, on an average, ten calls a minute. Between eleven and twelve o'clock 180,000 conversations take place, with an average of fifty new calls a second. The business done represents every department of human activity. Contracts are made, evidence given, lawsuits tried, degrees conferred, proposals of marriage made and accepted, voters canvassed—all by means of the telephone. I do not want to labor comparisons, but it is perfectly obvious that here in England we are still content to do things slowly and expensively without the telephone that could be done quickly and cheaply with it. The first thing that strikes an American coming to London is the overcrowding of the streets. He sees streams of messenger boys, clerks, and even business men walking, flying in trains, or going by 'bus or underground. In New York there is not half that overcrowding. Business is not done by letter or message or even by personal interview. It is done by telephone. The London Stock Exchange, the biggest market-place on earth, has fifteen telephone lines; the New York Exchange has 641. A big club of which I am a member has 6000 members and three telephone lines. On an average three hundred men—almost all of them busy professional men, business men, or members of Parliament—lunch there every day. Yet there is only one telephone line for every hundred of them. Every member of the House of Commons has had experience of the exasperating inadequacy of the telephone service there. In Congress every member has his telephone.

I am pointing out these differences not in order to show that England is decadent or that her commercial position is doomed or anything of that kind, but merely to show the English people what they are missing in convenience and comfort by not securing an adequate and efficient service. At the present moment such service as we have is regarded as a luxury for the rich, instead of being accepted as a necessity for all. For every person in the United Kingdom with a telephone there are at least sixty-nine without This lack of telephones lessens the value of the whole service. My telephone is of no use to me unless the man I want to ring up has got one too. This is where the telephone system here is being hampered. If we had the same telephone service in proportion to our population as the United States have, with its 9,000,000 telephones, we should have about 3,650,000 telephones, instead of only 750,000. In that case every subscriber would have five times the present facilities of conversation. Five telephones to one is too heavy odds for us to allow our commercial rivals to have against us in these days of stress. If we want two keels to one to keep our shores from invasion, we want at least an equal proportion of telephones to keep our business from destruction.

There is a curious idea, which has been extensively spread in some strange way, that America is more suited to telephone exploitation than this country. It is true that in America distances are greater and comparative means of communication less efficient than in this country. But that made the task of linking up America by telephone harder and not easier. In America they had to face and subdue natural obstacles of the most formidable kind. They had to traverse great forests where their poles looked like tooth-picks beside the enormous trees. They had to drive off Indians who coveted the bright wire for ear-rings and bracelets, and the bears who mistook the humming of the wires for the buzzing of bees and persisted in gnawing down the poles. In England we had no such natural difficulties with which to contend. With its natural advantages, its small area, its inter-dependent cities and counties, it is an ideal place for the development of the telephone. Nor can it be held that the fact that other means of communication exist justifies their substitution for the telephone. The use of the telephone is to prevent a man from being his own errand-boy. Because you can do a journey quickly by tube or train you need not neglect the chance of doing it quicker still by telephone.

This fact is not realized in England because the telephone service has always been the Cinderella of English life. Indeed, when we look at the history of the telephone in this country, it seems extraordinary that it has even survived to the extent that it has. When the telephone was first introduced into England it found the Government staggering under one of the

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most disastrous financial blows that it had ever received: the failure of the telegraph service to pay its way. The advent of the telephone put Ministers in a difficulty. If they bought it, the result might be that another financial failure might be added to the losses on the telegraphs, which they already felt to be excessive. If they let it alone, it might cut out the telegraph service altogether and leave them to face a total loss of all the public money that they had invested in it. The dilemma appeared to be complete. The Government under these circumstances decided first of all to get control of the new service. They obtained a decision of the Courts that a telephone was a telegraph. The Act of Parliament under which the decision was obtained was passed six years before a telephone was ever constructed, but that made no difference. The leading scientists of the day, including Tyndall and Lord Kelvin, warned the Government that they were making a fatal mistake, but they were disregarded. The Post Office were acting as the wicked uncles of the infant service. They had determined to get control of it in order to do it to death in some hidden and secret manner. Very soon their policy became clear. They were neither prepared to work it themselves nor to allow anyone else a free hand to develop it. The political theorists of that day believed that unrestricted competition was the only way to secure business efficiency. So licenses to organize a telephone service were granted to thirteen different companies. We can faintly imagine the confusion that would have ensued if they had all succeeded, but fortunately, as might have been forseen, the most alert and most energetic quickly swallowed all the rest. But even this repetition of the miracle of Aaron's rod did not soften the hard and jealous heart of the Postmaster-General, and he would not let the telephone service go free. He even acted so far upon Scriptural precedent as to increase the burden of its obligations. The Company was compelled to pay one-tenth of its gross earnings to the Post-Office. It had to hold itself in readiness to sell out at six months' notice at any time. And finally, when the Company had at last strung a long-distance system of wires, the Government came down and compelled it to sell.

The root cause of this stroke, which has been as disastrous financially as it was immoral politically—the Post Office made a loss last year of 15,000l. over the trunk service—was the jealousy of the telegraph service. For a long time the Post Office telegraphs had been envious of their younger and more popular rival. On the 2nd of March, 1892, the then Postmaster-General, Sir James Fergusson, had to confess in the House of Commons that "wherever the telephone system has been principally developed, there the growth of the telegraph revenue has been checked." Instead of drawing the obvious conclusion, that the public had begun to recognize the increased utility and efficiency of the telephone over the telegraph, and trying to make the new service as popular and convenient as possible, the Post Office adopted the opposite policy. It expropriated at an absurd valuation the whole of the Company's long-distance lines, and imposed the most harassing conditions as to the local areas in which the Company might work. If its object was to get permanent revenue for the State, experience has shown that it dismally failed; but if its object was to check the development of the telephone service in England it was a triumphant success. The result has been not to transform the telegraphs into a paying concern, but to turn the trunk lines into a losing concern—so much for Post Office control.

The next chapter in this miserable story of administrative failure opens in 1900, when the Post Office suddenly repudiated its obligations to the licensed Company and threw open the door to general competition. That action knocked twenty-five per cent. off the value of the National Telephone Company's securities and made its author, Mr. Hanbury, a member of the Cabinet; but it had no other recognizable results. The Post Office tried to start a second system in London, but in two years it discovered its mistake and had to ask the Company for its assistance and co-operation. It granted licenses to cities that demanded municipal ownership, but the policy of mutual throttling and antagonistic rivalries between them, the Company, and the Post Office system resulted in inevitable failure. Glasgow, for instance, spent 360,000*l.* on a plant, ran the system at a loss, and then sold it to the Post Office for 300,000*l.* When it had bought the system the Post Office had to reconstruct the main exchange and replace every one of the 12,800 subscribers' telephones in use. The other municipal telephones came to the same end. Brighton sold out

to the Post Office with a loss of nearly 2500*l*, and other municipalities had to sell to the National Telephone Company at considerably less than the service cost. All this happened because the Post Office would not realize that no telephone service can be complete or efficient unless it is self-contained and unhampered, and unless it is national in its scope. These repeated failures, however, did succeed in driving into the heads of the Postal officials some elementary appreciation of telephone conditions. But, like most lessons learnt by unwilling pupils, it was learned or applied the wrong way. Instead of realizing that the moral of all this confusion was the natural and perfectly comprehensible inability of Post Office officials to understand the special and complicated problem of the telephone, the official came to the conclusion that what was wanted was more instead of less of Post Office control. In 1905 they accordingly forced the Company to agree to a sale of its whole interest in 1911 at "reconstruction value" without any allowance at all for the goodwill of its enormous business. Like many hard bargains, this has proved to be in the end most expensive to those who made it. Once the certainty of appropriation by the Government at unremunerative prices began to overshadow the National Telephone Company, the development of the system was paralyzed. The spirit of enterprise and dash which characterized the early history of the Company was chilled; new districts were not exploited or new plant fitted except where absolutely necessary. The amount of capital expenditure of the Company decreased from over 1,000,000*l*. in 1907 to 360,000*l*. in its last year. Just when British telephony was beginning to recover from the persistent difficulties which Post Office interference had put in its way, the final blow of impending Post Office control destroyed for a decade the hope of an adequate exploitation of the service in this country. The National Telephone Company, always uncertain of the security of its title and hampered by the enormous royalties, amounting in all to 3,670,000*l*., that it was forced to pay to the State, had never been able to expand on generous and far-seeing lines. When it was faced with the certainty of speedy extinction it ceased to make any effort to do so. The service passed into the hands of the Post Office in a depressed and depreciated condition.

It cannot be said that the Post Office made any adequate preparations for its gigantic task. At the time of the transfer Great Britain was hopelessly behind the rest of the world in the provision of telephones. Whereas in Stockholm one man out of every four had a telephone, in Chicago one out of every nine, and in Berlin one out of seventeen, in this country in London only one out of every thirty-five, in Manchester one out of forty-seven, and in Birmingham one out of seventy-two, was so provided. The system was obviously inadequate to meet the expanding needs of an industrial community, and the only possible excuse for the State assuming control was that, with its great resources and absolute freedom from any fear of competition, it might be able to carry out the necessary revolution more swiftly and easily than any private company. But in order to do this a vast army of highly skilled men must be provided and the plans for the change drafted and examined by experts. Canvassers would be required to seek out business, and an educational campaign to instruct the public in the advantages and use of the telephone. Nothing of the kind was done or even contemplated. All that the Post Office could do after five years of preparation was to take over the existing service without dislocating it for more than a fortnight. No skilled men were trained and held in readiness for the needs of the State service. Therefore, instead of the transfer being a stimulus to the expansion of the telephone service it has actually acted as a check. The rate of expansion as shown in the last annual report is only about one-half what it was in 1906, and even so it exceeds the power of the Post Office to cope with it.

In America a new telephone can be installed in four or five days, whereas in this country it will take as many weeks, and in some cases almost as many months. The Post Office authorities quite truly say that without skilled engineers they cannot maintain and extend their service. But that is a difficulty which anyone might have foreseen. What I object to is that, knowing that skilled and trained men would be required, they made no adequate effort to ensure that such would be available when they were required. This is one illustration of the lack of foresight which has always marked their attitude towards the telephone service. When the transfer was effected they got rid

of the highly paid, experienced organizers and engineers at the head of the service and substituted for them comparatively ill-paid officials with no unusual telephone experience. I have nothing whatever to say against any of the existing officials. They do their work admirably under most difficult conditions. But they are probably not selected for having the special talents and experience which are required for running an enormous business enterprise like the telephone service.

The same thing applies to the whole internal organization of the service. The Post Office is destroying its efficiency by trying to force Civil Service methods on to a department for which they are utterly unsuited. It is not usual to pay a Civil servant occupying a certain position more than 1500*l.* a year, so the Chief Engineer cannot be paid more, although the National Telephone Company paid their officials twice the sum. That is the Post Office argument. The business argument is to get the best man and then pay him what he is worth. So with the rest of the staff. Under the private Company they were systematically promoted, wherever they were, so that every loyal servant of the Company was secured a rising income. Now all sorts of grades and classes have been introducd because they are common in the Civil Service, and a telephonist is not paid, as used to be the case, a level rate according to the work done, but a rate forced according to the particular "classification" of the Post Office in which she works. Moreover, it is generally believed among the staff that a judicious mediocrity and scrupulous observance of red-tape regulations are a better guide to promotion than keenness and enterprise. All these things may be small in themselves, but they are big in the result. The staff, instead of being happier under their "model employer," the State, are seething with discontent. Now, the telephone service is run by the nerves and tempers of the operators, and if the human element is dissatisfied and discontented these moods will inevitably be reflected by the machine which they operate. Next to the numbing effect of Post Office interference in the past must be put its stupid misunderstanding of the feelings of the staff, in assessing the blame for the present breakdown of the service.

There is no use now in trying to shut our eyes to the facts. During the whole history of the telephone in England the Post Office has acted like some kind of bad fairy, always interposing its curse just when the service was struggling out of its difficulty. Impregnable within its walls of bureaucratic obstinacy, the Post Office will accept suggestions from nobody nor heed the exasperated complaints of the subscribers. There is only one possible solution of the difficulty. Post Office methods have dismally failed, and they must be ended. A large number of suggestions have been put forward from time to time for the reform of the service, but I am afraid that none of them now are adequate. The Chamber of Commerce last year pressed, at my invitation, for a separation of the telephone from other departments of the Post Office, so that some relics of the old independence might be preserved from the stifling effects of Civil Service tradition. The Postmaster-General would not hear of it. Then the Parliamentary Telephone Committee suggested the appointment of a general Advisory Committee representing the subscribers, with much the same powers of advice as are possessed by the Advisory Committees of the Board of Trade. That also was refused. Now I think that neither of these suggestions is adequate to meet the case. Since they were put forward we have seen more of the methods and ideas of the Post Office, and I think that the only possible solution of the whole problem is to take the control of the service right away from the Post Office and place it under a board of business men who will run it on commercial lines. We have a precedent for such a body in the Port of London Authority, and I think that if State intervention in commercial enterprise is to be increased that precedent will have to be extensively followed. Something of the same idea is also contained in the suggestions in regard to Irish railways put forward by the recent Viceregal Commission.

The present arrangements are hopelessly unbusinesslike. The finances of the system are involved and obscure to a degree which would not be tolerated in the case of any commercial company. The National Telephone Company was accustomed to issue clear and intelligible accounts a fortnight after the books were closed. The Post Office issues accounts which it is impossible for any man who has not had a special training in Treasury accountancy to understand, and they are not debated for something like eighteen

months after the year to which they refer has expired. Even when the time comes for a discussion it is often farcical in character. Last year the Post Office never condescended to make any reply at all to the criticisms that were directed against it. This year we were more fortunate, but we were unable to obtain from the Postmaster-General any real information as to how the service stands. This much is clear. In two years the Post Office has already managed to dissipate the substantial profit made by the National Telephone Company. The Company paid a royalty to the State of 350,000*l.*; it had to pay income-tax to the extent of 38,000*l.* It had to raise money in the open market and to put by large sums for the redemption of capital. Yet it paid six per cent. to its shareholders. Under Post Office control the profit has been decreased to less than one and a half per cent., representing a total net profit for the year of only 303,000*l*, although, of course, the Post Office pays no royalties, pays no income tax, and raises money on the full security of the State. That is a record from a financial point of view which amply justifies the demand for the more businesslike control. A business board would, at all events, issue intelligible accounts which would let the subscribers know exactly the financial position of the concern, and would make some provision for allowing them to ventilate their complaints with some prospect of their receiving attention.

At the present moment the Post Office does not realize the two main principles of telephonic success. The first is that the man at the telephone is a man in a hurry. He may consent to wait for any other possible service, but he never will consent to wait for the telephone. For him every second is a minute long because every second may be of vital importance. The Bell Company, in America, has more than once scrapped plant worth thousands of pounds in order to save a few seconds on a call. There a delay of a quarter of an hour in a thousand-mile call is a subject for special investigation. Here the trunk lines, which have been for years under the control of the Post Office, are notorious for their slowness and untrustworthiness, and excessive charges as compared with the Continent. As an instance, the trunk fee in Germany for a distance of 300 miles is 1*s.*, in England it is 2*s.* 6*d.*, which is more than double for the same distance. The constant signal of "Line engaged" or "Number engaged," during the busy parts of the day shows that the deficiency of lines between exchanges is almost as bad as the deficiency in trunk lines. Yet the Post Office is taking no adequate steps whatever to lay down the new lines that are necessary for the speeding-up of the service. A business board would recognize that what is wanted is to give a quick service when it is most required, in the busiest time of the day, and would rather lay down trunk lines ahead of immediate requirements than allow the lack of them to hold up the service. The business organizers of the Bell Telephone Company have now got in stock $25,000,000 worth of reserve plant waiting for the development of the service to require it. Even in the City of New York one-half of the cable ducts are empty, in expectation of the greater city of eight million population which they expect in 1928. Money invested in developing the service is well invested, since by the second principle of telephony every extension adds value to the whole.

The future of the telephone service in this country is in the hands of its subscribers. They are a sufficiently formidable body to enforce their will upon any Postmaster-General. If they are willing to put up with a half-starved, half-grown, neglected and inefficient service, neither cheap nor useful, they can abandon it to the bureaucrats of the Post Office. They have succeeded in losing something like 30,000,000*l.* of the nation's capital and about a million a year of its income in running the telegraph service, and I am sure that they may be equally successful with the telephone. But if the subscribers are really determined to see that this all-important service is developed and expanded to meet the needs of the people, and, in the picturesque language of Mr. Casson, "fitted like a garment round the habits of the people," they will insist that the evil power of the Post Office shall no longer be exercised. The Postmaster-General would retain over the telephones the kind of suzerainty that the Home Secretary has over the present Prison Commissioners or the Lunacy Commissioners, but no more. For the first time in its history the telephone must be given a free hand over the whole country, unhampered by red tape or official restriction. It is not to be supposed that such a change will be effected without vigorous official opposition. We can only get it by acting to Parliament the part of the importunate

widow. If every subscriber who has got a complaint will badger his member and make him in turn badger the Post Office, the Government may yield to weariness what they withheld from reason, and grant the desired concession. Popular disgust throughout the country with the muddle and inefficiency of the Post Office system, and the autocracy of its methods, is so great that it only needs a little organization to make of it a force that no Government could resist.

C. S. GOLDMAN,
Chairman of Parliamentary Telephone Committee.

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